

Department of Environmental Services City Hall Room 300B, 30 Church Street Rochester, New York 14614-1290 www.cityofrochester.gov



NUMBER 8.4

FLEET MANAGEMENT POLICY / PROCEDURE

SUBJECT: Predictive Maintenance Savings

APPROVED:

Michael Quattrone, Fleet Manager

PURPOSE: Document savings associated with Predictive Maintenance

PROCEDURE: Upon receipt of PM Task Improvement Form or at one of the scheduled

intervals to run the report, check the report results for frequency of like

work orders between scheduled preventative maintenance tasks.

Examples of savings that resulted from predictive maintenance follow:

We found that we were replacing front end loader pivot pins and dog bone links often. The dog bone link pins were seized in the bore thus causing the dog bone link to weaken and break. Removal of the pins would take a long time as they were so seized. PM's were initially set up for every 250 hours and that amount of time was too long and operators were not consistent about greasing the unit as part of a PM. We added a PM – L to all front end loaders every 50 hours of service in an effort to eliminate pin failures due to seizure affecting vehicle uptime.

Another good example will be where an employee submitted a PM task improvement form for an issue he had been seeing on 2006 and later RPD Chevy Impala's. He noticed many of these vehicles were having a low power (sluggish) running condition. After diagnosing this issue multiple times, he found the same failure causing this symptom. The front three spark plugs were wearing out. In most cases, the rear spark plugs were fine. This condition was researched and it was found that these vehicles have a cylinder deactivation system in them that helps improve fuel economy. As a result of this great initiative, we have updated the PM task list to include inspection of the spark plugs at every annual PM - C. This upgrade to how we perform our PM's will most

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certainly increase the overall fuel economy of the fleet, create less downtime and improve customer satisfaction.

In a third example, we noticed that we were having a lot of battery issues with our RPD marked fleet. These issues would lead to dispatching road service to jump start cars, dispatching a tow truck to tow in cars and fleet techs and officers having to jump start their cars on occasions. Most of these breakdowns were unscheduled and lead to increased downtime for the fleet. When we purchased new 2008 RPD marked cars, we added a system called "Priority Start", this was an automatic battery disconnect switch that would shut the battery off when battery voltage dropped below 11.6 volts. In most cases this would allow the vehicle to start even if an accessory was left on for an extended period of time. When we purchased 2009 RPD marked cars, we switched vendors and went with "Battery Brain" for the fleet's automatic battery disconnect switch. The reason for the change was because the officers / operators of the vehicles wanted a simple push button device to reset the battery if it went into an auto disconnect mode. "Battery Brain" had this feature where "Priority Start" did not. We still go through quit a few batteries with the RPD marked fleet. As technology continues to expand with AVL, on-board computers and printers, emergency lights and sirens, etc. the electronic load demand for these vehicles is extremely high. We are taking a predictive stand on this issue by adding helpful features when new cars are purchased as well as load testing the batteries at their annual PM. The goal is to keep unscheduled battery related repairs to an absolute minimum.

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